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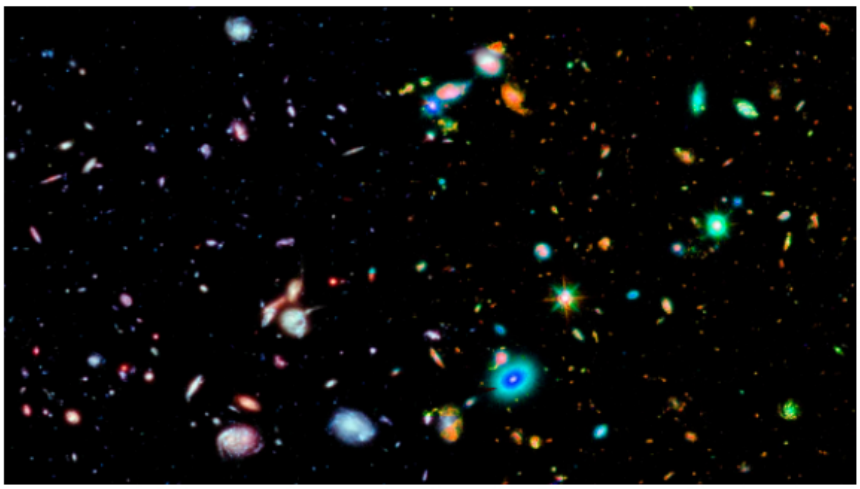
No, NASA didn't find a parallel universe where time runs backward

Sorry, but the truth is: You're stuck with this universe for now.

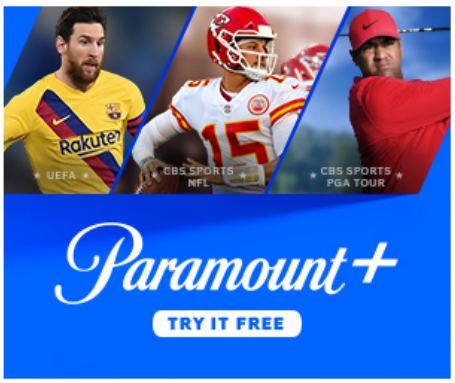
Jackson Ryan May 22, 2020 5:20 p.m. PT

33



There's no mirror universe, sorry.

NASA/Hubble/Jackson Ryan/CNET



Let's play a game of bad news, good news, bad news.

Bad news first: 2020. Literally all of it. Every second. Every waking moment of 2020. It's grim, I know. Bushfires, pandemic, murder hornets. When will it end?

But the good news: Apparently, scientists have discovered a parallel universe, just like our own. It's a little different to ours though. In this mirror world, time runs backward. It's like a Benjamin Button universe. That means they're heading back to 2019, the good ol' days, right?

Well, now more bad news: I'm here to spoil the parallel universe party. Scientists haven't *actually* discovered a parallel universe, but you might *think* they have, based on multiple reports from across the web

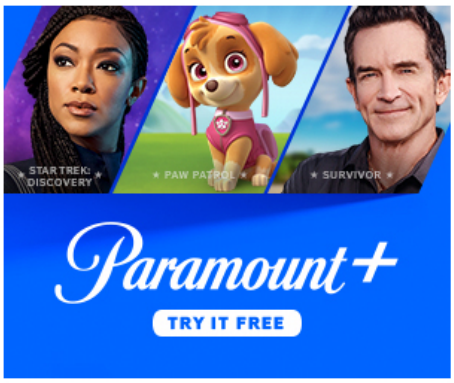
In the last few days a number of publications have suggested scientists "found evidence" for a parallel universe where time runs backward. These mind-bending articles posit that an experiment in Antarctica detected particles that break the laws of physics. All the reports pull from the same source of information: A pay-walled report by New Scientist on April 8 titled "We may have spotted a parallel universe going backwards in time."

At the center of the report are findings from the Antarctic Impulsive Transient Antenna or ANITA, an experiment maintained by researchers at NASA. It involves an array of radio antennas attached to a helium balloon which flies over the Antarctic ice sheet at 37,000 meters, almost four times as high as a commercial flight. At such a height, the antennas can "listen" to the cosmos and detect high-energy particles, known as neutrinos, which constantly bombard the planet.

Now playing: Black hole seen in real life for the first time

2:56

These particles pose no threat to us and pass through most solid objects without anyone even noticing -- some estimates suggest 100 trillion neutrinos pass through your body every second! Rarely do they interact with matter. But if they do smash into an atom, they produce a shower of secondary particles we can detect, which allows us to probe where they came from in the universe. ANITA detects neutrinos pinging in from space and colliding with matter in the Antarctic ice sheet.



Over the years, ANITA has detected a handful of "anomalous" events. Instead of the high-energy neutrinos streaming in from space, they seem to have come from a strange angle, through the Earth's interior, before hitting the detector. These findings *can't* be explained by our current understanding of physics -- that much is true.

"The unusual ANITA events have been known and discussed since 2016," says Ron Ekers, an honorary fellow at CSIRO, Australia's national science agency. "After four years there has been no satisfactory explanation of the anomalous events seen by ANITA so this is very frustrating, especially to those involved."

Although the New Scientist report was filed on April 8 -- and the ANITA results are almost two years old -- the theory has only recently caught fire. Ever more urgent headlines have spurred its spread across social media. "NASA uncovers evidence of bizarre parallel universe where physics, time operate in reverse" reads one. Another says "Scientists may have just found evidence of a parallel universe."

Peter Gorham, the principal investigator on ANITA, says it's "some unfortunate tabloid journalism" and notes an early report by the Daily Star "just made some things up about myself and our experiment."

Because the New Scientist piece is behind a pay wall, many of the

subsequent reports on the parallel universe are cribbed from the opening paragraphs and don't explain the full details behind the find, in which one of the scientists admits "there are one or two loose ends" for the parallel universe theory. There's also another neutrino observatory at the South Pole, known as IceCube, which has been following up on the ANITA observations and suggests the standard model of physics cannot explain these strange events.

"In such a situation you start exploring even more extreme possibilities," says Ekers.

There is a really interesting science story here, but it's not the one you're being sold. The ANITA experiment is mind-boggling in its own right. It looks for "ghostly" particles that pass through most matter. It has definitely detected something unusual and unexpected. There are plenty of competing theories that aren't explored in the quick news hits, like the idea the Antarctic ice may itself be giving rise to these anomalous events.

Pat Scott, an astroparticle phenomenologist at the University of Queensland, explains the idea "is plausible" while suggesting there are many, many other theories that can account for the anomalous ANITA detections. "There's nothing that necessarily makes it a detection of a parallel universe," he says.

What this boils down to is simple: There's so much we don't know about neutrinos that astrophysicists and scientists are still trying to unravel. "We are **absolutely sure** that there is new physics out there to be found," says Clancy James, a radio astronomer at Curtin University in Australia.

Jumping straight to "parallel universes" is a little over-the-top, and there are less mind-boggling theories that could explain what ANITA has detected. "There are a number of potential candidate particles that could account for the results from ANITA," says Geraint Lewis, an astrophysicist at the University of Sydney.

"Whilst parallel universes sound exciting and sexy when discussing the ANITA signal, alternative ideas are still on the table," Lewis notes. He also says that doesn't mean the idea is wrong -- but the weight of evidence is currently against it.

Unfortunately, the majority of reports regurgitating this theory without thorough examination of the evidence complicate the public's relationship with science, which is already on shaky ground thanks to misinformation campaigns around climate change and the coronavirus pandemic.

When you see stories like these its good to remember "the Sagan Standard", an adage uttered by the famed astronomer Carl Sagan. It goes "extraordinary claims require extraordinary evidence." At present, we've got a great theory but we lack the extraordinary evidence to back it up.

What we do have, Ekers says, is "a somewhat cheeky explanation ...

born out of the frustration of having nothing else that worked." He says this is "good out-of-the-box thinking" and a "fascinating" idea but not one that should be taken very seriously.

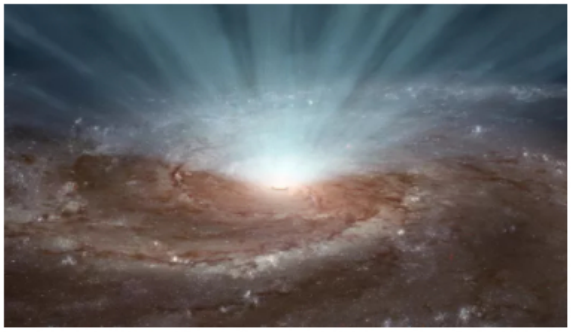
Gorham has requested the New York Post retract their version of the story, but it remains available.

So, I'm sorry. We didn't find evidence for a parallel universe. Fortunately, if there *is* one, then over there this article doesn't spoil the theory at all! It supports it! So please, direct all your email toward the parallel universe Jackson Ryan.

No, I won't be taking questions.

What is a black hole? The universe's dark, mysterious monsters

See all photos



First published on May 20, 2020 at 10:25 p.m. PT.

33 COMMENTS

Sci-Tech

CNET editors pick the products and services we write about. When you buy through our links, we may get a commission.

Best early Prime Day 2021 deals: Echo Buds $80, Kasa Smart Plug $7.50 and more

Amazon has already slashed prices on lots of

products. Find out which ones are worth grabbing now.

Rick Broida June 17, 2021 7:05 a.m. PT

DEAL		SAVINGS	PRICE
	Kasa Smart Plug: $7.49 with coupon	**Save 50%**	SEE AT AMAZON
	Echo Buds 2021: Starting at $80 (lowest price ever)	**Save $40**	$80 AT AMAZON
	Echo Dot: Buy two, get one free	**Save $50 with code PDDOT2PK**	$50 AT AMAZON
	Roku Express 4K Plus: $30	**Save $10**	$30 AT AMAZON
	Echo Show 5 (first-gen): $45	**Save $40 vs. 2nd-gen Show 5**	$45 AT AMAZON

Show more (7 items)

This story is part of **Amazon Prime Day 2021**, CNET's guide on everything you need to know and how to make sure you get the best deal.

Amazon Prime Day officially starts on Monday, June 21, but in a way it's already happening. As always, Amazon has rolled out a growing number of early deals, including some of the best prices we've seen on products like the **Echo Auto, Echo Frames (2nd-gen), Echo Buds (2nd-gen) and Luna Controller**. Note that you'll need to be a Prime member to take advantage of most of these discounts.

Before we dive into those, take note that other retailers, including Walmart and Target, have announced competing sales. Best Buy's Bigger Deal event is happening right now, with more and better deals appearing daily, and Kohl's is getting in on the Prime Day action with a Wow Deals event on June 21-22.

In addition to the early Amazon deals listed below, check out these other incentives:

- Don't already have an Amazon Prime Rewards Visa card? Now's the time to sign up: You'll immediately receive a $150 Amazon gift card

upon approval.

- Amazon Prime members can get six free months of Amazon Music Unlimited with the purchase of select Echo devices. However, those devices are barely discounted at the moment. Wait for June 21 and you'll likely see much lower prices on the Amazon device of your choice -- and the freebie offer is good through June 22, so you won't miss out.
- Don't need another Echo? No problem: Amazon is offering four free months of Amazon Music Unlimited to new subscribers -- no purchase necessary. (Note that you'll get billed at the regular rate after that, unless you cancel.)
- Prime members can also get early deals on video, including 99-cent streaming subscriptions.
- Amazon game-streaming platform Twitch is offering huge discounts on merch and subscriptions for the next couple of weeks.

Looking for more? Check our guide on how to win at Prime Day to prepare for all the ways to save. (Hint: if you don't already have it, it's time to sign up for Prime membership.) One of the best: a $10 Prime Day credit for spending $10 right now on small business products. And make sure to check out Amazon's own Prime Day page for updates.

Watch this: Amazon Prime Day: Watch before you shop ▶ 4:29

EARLY PRIME DAY DEALS AVAILABLE RIGHT NOW

Kasa Smart Plug: $7.49 with coupon

Save 50%

This is the lowest price on record for Kasa's popular plug, which drops 50% when you clip the on-page coupon. And it's literally CNET's favorite

smart plug, period. So if you have a lamp, coffee maker or the like that would benefit from timers, voice commands and remote control, look no further.

SEE AT AMAZON

Echo Buds 2021: Starting at $80 (lowest price ever)

Save $40

David Carnoy/CNET

Amazon's second-generation true-wireless earbuds are just a couple of months old, and now they're marked down to their lowest price to date: $80 for the standard model, or $100 for the step-up version with the wireless charging case. Either one is a $40 discount off the earlier price. Read our Echo Buds 2 review.

$80 AT AMAZON

Echo Dot: Buy two, get one free

Save $50 with code PDDOT2PK

Chris Monroe/CNET

The Echo Dot's full price is $50 (though it often sells for less). Now, however, just enter the code **PDDOT2PK** at checkout, and that price will get you two of Amazon's basic smart speakers for the price of one.

$50 AT AMAZON

Roku Express 4K Plus: $30

Save $10

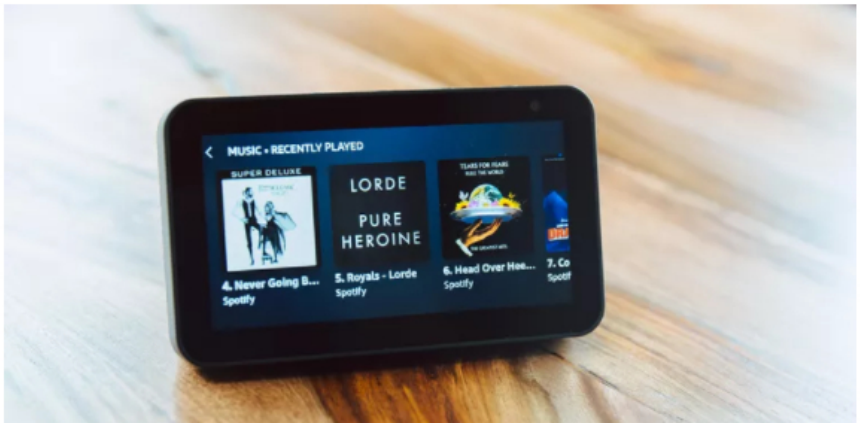
Sarah Tew/CNET

At its $40 retail price, the new-for-2021 Roku Express 4K Plus was already dirt cheap. But now our new favorite streamer -- which gets every streaming service you can think of in luscious 4K HDR quality, along with a ton of free ad-supported content -- is even 25% less expensive.

$30 AT AMAZON

Echo Show 5 (first-gen): $45

Save $40 vs. 2nd-gen Show 5



Tyler Lizenby/CNET

Amazon just released an updated 2021 version of its smallest Echo smart display with an improved camera -- but that one will run you $85 right now (no telling if it will or won't get discounted between now and the end of Prime Day proper). In the meantime, the older model is available for just $45, returning to its lowest price ever. Read our review of the Echo Show 5.

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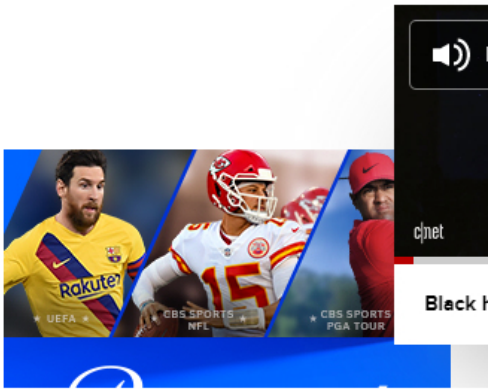


Lori Grunin/CNET

Along with Xbox Cloud and Google Stadia, Amazon's Luna is one of a high-powered trio trying to make cloud-based gaming more mainstream. In the case of Luna -- which is still in beta -- you can fire up streamable sessions in browsers or dedicated apps on everything from PCs and Macs to iPhones and Android devices, as well as Amazon's Fire TV Stick 4K. Of course, you'll need to pay a monthly fee of $6 to $15, but you'll be able to game anywhere you have a superfast internet connection.

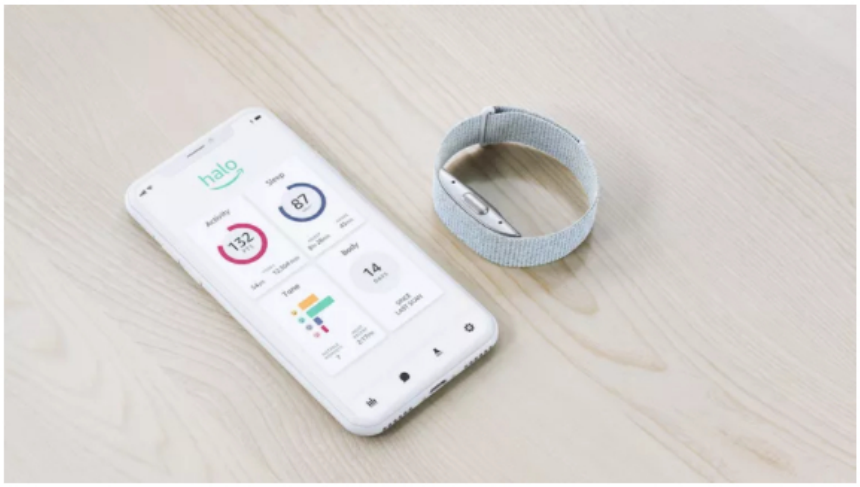
For this early Prime Day sale, the controller hits its lowest price to date, while the **Luna phone clip bundle ($82)** and **Fire TV Stick 4K bundle ($74)** also get nice price cuts. Read our Luna Controller hands-on.

$49 AT AMAZON

Amazon Halo: $70

Save $30

Save $30



Amazon

The "Amazon Halo fitness tracker sounds awesome, but also like a Black Mirror episode." That was our original take on Amazon's health band when it was first announced last year, and it still feels more invasive than other wearable health products, thanks to its ability to monitor your tone of voice and body fat (with, of course, an add-on service). But at 30% off -- within $5 of its all-time low -- maybe you'll want to take the plunge. Read the Amazon Halo review on ZDNet.

$70 AT AMAZON

Amazon Echo Frames (2nd-gen): $175 (lowest price ever)

Save $75

David Carnoy/CNET

Don't call Amazon's Echo Frames "smart glasses" -- there's no AR or VR present here. These are, instead, "audio glasses" that double as headphone replacements (thanks to small speakers in the stems). And, of course, Alexa is on board for the ride. We didn't love the original version of this product, but this is the second generation hardware,

which offers better battery life, auto shutoff (when the frames are set down) and auto-adjusting volume. This is also the lowest price to date.

$175 AT AMAZON

Echo Auto (with 6 months of Music Unlimited): $15 (lowest price ever)

Save $35

Tyler Lizenby/CNET

Android users already have Google Assistant, and iPhone users have Siri at the ready. But if you want to bring Alexa into your car, you'll need this little gadget for the dashboard. It lists for $50 (though often sells for closer to $25). However, the Echo Auto is now down to its lowest price ever: Just $15, with six free months of Amazon Music Unlimited thrown in for good measure. Read our Echo Auto hands-on.

$15 AT AMAZON

Roku Ultra 2020 4K UHD streamer: $69

Save $30

Sarah Tew/CNET

Roku's flagship streaming box offers all the bells and whistles, including a remote finder, an Ethernet port and support for Dolby Vision 4K HDR. I remain a big fan of the remote's wired headphone jack, which is just less of a hassle than wireless audio via the Roku app (which doesn't always work well, in my experience). It has two programmable shortcut buttons, too.

This deal has been live a few weeks already. Will it get even better on Prime Day proper? It's possible, as Roku usually tries to compete with Amazon's own Fire TV deals.

$69 AT AMAZON

EXPIRED DEALS, MAY RETURN SOON

Eero 6 dual-band mesh Wi-Fi 6 router and extender: $129 (Update: Expired)

Save $70

Ry Crist/CNET

You can have my Eero when you pry it out of my cold, dead house. And I have an older model, not this new-fangled, up-to-date Eero 6. Plug one of the stations into your modem and enjoy blissfully simple, super-strong Wi-Fi throughout your dwelling. (Mine has been a particular good match with T-Mobile Home Internet.)

This price is the lowest on record. There's always a chance it could get lower still on Prime Day, but I'd be surprised to see it dip by more than another $5-$10.

$129 AT AMAZON

Blink Mini indoor security camera: $20 (Update: Expired)

Save $15

Amazon

At this price (which, like a lot of Prime Day deals, is available only to Amazon Prime subscribers), the Blink Mini indoor camera rivals the CNET-favorite Wyze Cam. In fact, the newest version of the latter now costs $33, so this is actually a better deal. Maybe much better, if you don't care about free cloud storage.

Read CNET's Blink Mini review to learn more.

$20 AT AMAZON

EVERYTHING TO KNOW ABOUT PRIME DAY 2021

When is Amazon Prime Day 2021?

Isn't it time to start calling it "Prime Days"? Because it hasn't been just a single day for years. Once again, it's a 48-hour event that runs as follows.

- **Prime Day starts on Monday, June 21 at 12:01 a.m. PT (3:01 a.m. ET).**
- **Prime Day ends on Tuesday, June 22 at 11:59 p.m. PT (Wednesday, June 23 at 2:59 a.m. ET)** -- but some deals often extend a few hours into the following morning, if not longer.

A batch of early discounts leading up to the main event are already live.

What will be on sale during Amazon Prime Day 2021?

As always, anything and everything. But this is definitely the time of year to look for deep discounts on Amazon gear, including:

- Echo smart speakers and displays
- Fire TVs and Fire TV Sticks
- Fire tablets
- Kindle e-readers
- Ring security devices
- Eero networking products

Granted, that stuff goes on sale all the time -- a recent Mother's Day sale revealed savings rivaling Prime Day on a lot of these devices -- but the absolute lowest prices are usually reserved for Prime Day and Black Friday.

We also typically see better-than-usual deals on things like Instant Pots, Apple AirPods, Bose headphones and Roku streamers. Make no mistake: This might be Amazon's party, but plenty of other stores and sellers will be getting in on the action.

PRIME DAY 2021

New Prime Day price drops now available

Best mattress deals for Prime Day and June 2021

Early Prime Day TV deals

What other stores will participate in Prime Day 2021?

This may be an Amazon event, but that won't stop other stores from getting in on the action. Walmart has already announced a Deals for Days event running from June 21 to 23. Similarly, Target's recently announced Deal Days event will run from June 20 to 22. Expect Best Buy, Kohl's and other stores to roll out big sales of their own. Best Buy, for example, is likely to compete heavily on TV deals. We'll update this when more events are announced.

CNET CHEAPSKATE

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What are the best deals so far?

As we get closer to the main event, there will be loads of Prime Day deals to prepare for. For now, these are the best things we've been able to find.

- Best streamer deals for Prime Day 2021
- Best early Prime Day headphone deals
- Best early Prime Day TV deals
- Best early Prime Day phone deals
- Best early Prime Day kitchen and cookware deals

Amazon and its partners will be making a ton of announcements over the next two weeks.

What Amazon Prime Day deals can I get right now?

At a certain point, an "early *Prime Day* deal" becomes a matter of semantics. For instance, Amazon is pitching its discounted Fire TV models as early Prime Day deals -- but trust me when I say there are deals to be had all day, every day. You can check my Cheapskate page for the latest and greatest, sign up for the Cheapskate newsletter (see that "Sign Me Up" box just below), get deal texts sent right to your phone and so on.

You can also follow me on Facebook and Twitter. And check out Amazon's Daily Deals page, where the retailer markets its limited-time and semipermanent offers. Spoiler alert: Deal quality varies widely from day to day.

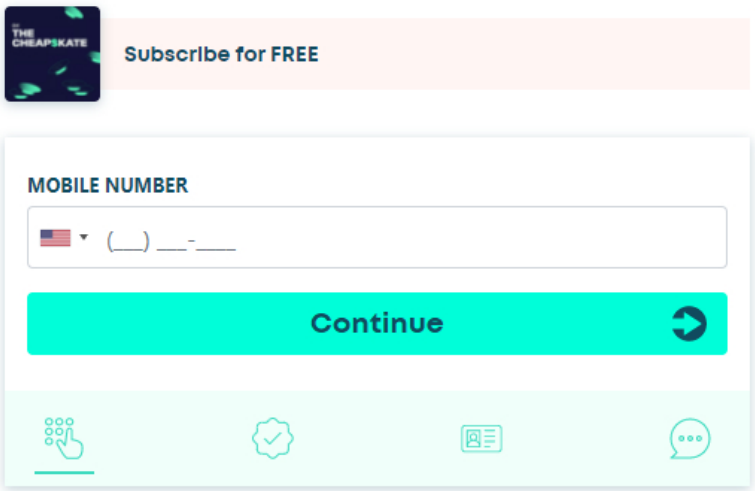
How can I save more during Prime Day 2021?

The best thing you can do is sign up for an **Amazon Prime Rewards Visa Signature Card**. It's a no-annual-fee card, so there's no cost to get it. Once you're approved, you'll immediately receive a $100 Amazon gift card, and then get 5% cash back on most Amazon purchases -- including products that are on sale for Prime Day. Sometimes Amazon bumps that cash back to 10% or 15% on select items.

Right now, for example, you can also get 15% back on various Kasa smart home products, 10% back on the Amazfit Band 5 and more.

The Cheapskate's deal texts

CNET's Rick Broida scours the web to get you great deals on tech products and so much more. Sign up now to get the inside scoop weekdays via text, direct from The Cheapskate.



What is the Amazon Prime Day concert?

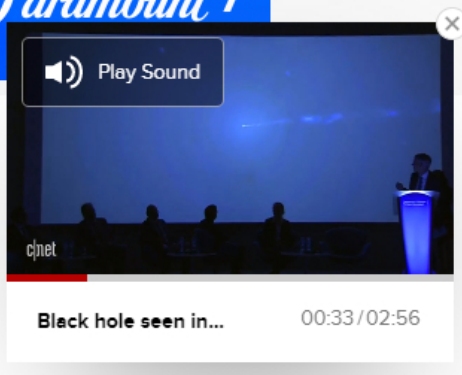
This year Amazon is busting out some new tricks to promote the massive event. The retail giant has announced a three-part concert series called The Prime Day Show, featuring performances from Kid Cudi, H.E.R. and Billie Eilish. Each concert is expected to have its own unique theme and will start livestreaming on Thursday, June 17. If you aren't able to tune in on launch day, the streams will be available for 30 days.

SEE AMAZON DAILY DEALS

Stay tuned for more!

Read more: The Cheapskate's 6 ways to win Prime Day

CNET's Cheapskate scours the web for great deals on tech products and much more. For the latest deals and updates, follow him on Facebook and Twitter. You can also sign up for deal texts delivered right to your phone. Find more great buys on the CNET Deals page and check out our CNET Coupons page for the latest Walmart discount codes, eBay coupons, Samsung promo codes and even more from hundreds of other online stores. Questions about the Cheapskate blog? Answers live on our FAQ page.



CNET editors pick the products and services we write about. When you buy through our links, we may get a commission.

Prime Day 2021: 12 big deals available now, plus new Echo